

### REMARKS

#### Drawings

The drawings have been objected to under 35 CFR 1.83(a) as allegedly failing to show "that the master process model 20 depicted includes with it, but is not limited, to, the virtual blank 10, added manufacturing features 12a-12j by way of virtual machining, and datum planes 2, 3, and 4, all in their respective associative relationships as exhibited from the geometries and characteristics of the reference set 26" as described in the specification on page 19, lines 2-6. The Applicants respectfully disagree with this objection and respectfully direct the Examiner's attention to, e.g., Figures 6 and 8. Therein depicted are each of the aforementioned elements and their respective relationships. The Applicants accordingly submit that the drawings are in compliance with 37 CFR 1.83(a) and respectfully request reconsideration and withdrawal of the objection.

#### Specification

The Examiner has objected to the specification under 37 CFR 112, first paragraph, as allegedly containing terms which are not clear, concise and exact. The Applicants have modified the Specification in accordance with the Examiner's suggestion and submit that the Specification is in compliance with 37 CFR 112, first paragraph. Reconsideration and withdrawal of the objection is respectfully requested.

#### Claim Disposition

Claims 1, 2, 9, 10, 13 -- 22, 44, 47 -- 51, 58, 59, 62 -- 71, 93, 96 -- 100, 104 -- 113, 116, 119 -- 123, and 128 - 137 are pending in the application. Claims 1, 2, 18, 44, 50, 51, 67, 99, 100, 109, 122, 123, and 133 have been amended. The Applicants submit that claims 1, 2, 9, 10, 13-22, 44, 47-51, 58, 59, 62-71, 93, 96-100, 104-113, 116, 119-123, and 128-137 are in condition for allowance for at least the reasons presented herein. No new matter has been entered by this amendment.

#### Claim Rejections Under - 35 USC § 112

Claims 1, 2, 9, 10, 13-22, 44, 47-51, 58, 59, 62-71, 93, 96-100, 104-113, 116, 119-123, and 128-137 have been rejected under 35 U.S.C. 112, second paragraph, as allegedly failing to set forth the subject matter which applicant(s) regard as their invention. The Examiner states: "Evidence that claims 1, 2, 9, 10, 13-22, 44, 47-51, 58, 59, 62-71, 93, 96-100, 104-113, 116, 119-123, 128-137 fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in the reply filed January 5 2005. In that paper, applicant has stated that creating a master process model comprises a virtual blank, and the 'virtual blank exhibits fourth associative relationship with said coordinate system' in at least claims 1 and 7 on pages 2-3, and this statement indicates that the invention is different from what is defined in the claim(s) because if the master process model comprises the virtual blank, and the virtual blank exhibits fourth associative relationship with a coordinate system, the master process model would also, by association, have a relationship with the coordinate system. This statement indicates that the invention is different from what is defined in the claim(s) because the claims, as such, require that the master process model lack an associative relationship with a coordinate system."

The Applicants respectfully disagree with the Examiner's characterization of the limitations recited in claims 1, 50, 99, and 122. As recited, the master process model lacks an associative relationship with a coordinate system. Further, as recited, the at least one manufacturing feature exhibits an associative relationship with the coordinate system. The manufacturing feature is virtual machined into the virtual blank. Thus, the associative relationship questioned by the Examiner occurs between the manufacturing feature and the virtual blank during the step of virtual machining. Accordingly, the Examiner's reference to the Applicants' reply dated January 5, 2005 whereby a "virtual blank exhibits fourth associative relationship with a coordinate system" can be reconciled using the Applicants' construction of the claims limitations as provided above since the associative relationship exists between the virtual blank and the coordinate system by virtue of the virtual machining step as recited in claims 1, 50, 99, and 122.

Notwithstanding, the Applicants have amended claims 1, 50, 99, and 122 in a non-narrowing manner to clarify that which the Applicants regard as the invention. Claims 1, 50, 99, and 122 recite "identifying a real-world blank for machining; *generating a virtual blank from a referenced set of geometries*, the virtual blank corresponding to the real-world blank

and *lacking an associative relationship with a coordinate system*; creating a master process model that includes the virtual blank, the master process model lacking an associative relationship with the coordinate system; virtual machining at least one manufacturing feature into said virtual blank, each of said at least one manufacture feature exhibiting an associative relationship with said coordinate system; and deriving manufacturing instructions from said master process model to create a real-world component by machining said manufacturing feature into the real-world blank.”

The Applicants submit that claims 1, 50, 99, and 122 are in compliance with 35 U.S.C. 112 and respectfully request reconsideration and withdrawal of the rejections. Claims 2, 9, 10, 13-22, 44, 47-49, 51, 58, 59, 62-71, 93, 96-98, 100, 104-113, 116, 119-121, 123, and 128-137 depend from respective claims 1, 50, 99, and 122. For at least these reasons, the Applicants submit that claims 2, 9, 10, 13-22, 44, 47-49, 51, 58, 59, 62-71, 93, 96-98, 100, 104-113, 116, 119-121, 123, and 128-137 are in compliance with 35 U.S.C. 112 and respectfully request reconsideration and withdrawal of the outstanding rejections.

Claims 1, 2, 9, 10, 13-22, 44, 47-51, 58, 59, 62-71, 93, 96-100, 104-113, 116, 119-123, and 128-137 have been rejected under 35 U.S.C. 112, second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner states with respect to claims 1, 50, 99, and 122 that these claims “require the limitation of virtual machining a manufacturing feature into a virtual blank, wherein the manufacturing feature exhibits an associative relationship with a coordinate system, wherein the virtual blank is included in a master process model that lacks an associative relationship with the coordinate system. Since the master process model includes the virtual blank, it would also, by association, have a relationship with the coordinate system. Therefore, it is not clear how the master process model lacks an associative relationship with the coordinate system.”

The Applicants submit that claims 1, 50, 99, and 122 are in compliance with the provisions of 35 U.S.C. 112, second paragraph, at least for the reasons presented above. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the outstanding rejections.

The Examiner states with respect to claims 2, 51, 100, and 123 that these claims require the limitation that "said associative relationship is a parent/child relationship", however claims 2, 51, 100, and 123 depend from claims 1, 50, 99, and 122, respectively, and that claims 1, 50, 99, and 122 recite the limitations of a model "lacking an associative relationship" and a feature "exhibiting an associative relationship". The Examiner states that it is unclear which associative relationship is "said associative relationship". The Applicants have amended claims 2, 51, 100, and 123 to recite "wherein said associative relationship *exhibited between said at least one manufacturing feature and said coordinate system* is a parent/child relationship." It is believed that the amendments made to claims 2, 51, 100, and 123 render moot the rejections under 35 U.S.C. 112, second paragraph. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the outstanding rejections.

Claim 44 has been amended to rectify an issue of dependency as requested by the Examiner. Claim 44, as amended, now depends from claim 1.

The Examiner states that there is insufficient antecedent basis for the limitation "said datum planes" as recited in claims 18, 67, 109, 133. The Applicants have amended claims 18, 67, 109, and 133 to recite "wherein said *one or more* datum planes" and submit that claims 18, 67, 109, and 133 provide sufficient antecedent basis.

For at least the reasons presented above, the Applicants submit that claims 1, 2, 18, 50, 51, 67, 99, 100, 109, 122, 123, and 133 are in compliance with 35 U.S.C. 112 and respectfully request reconsideration and withdrawal of the outstanding rejections.

#### **Claim Rejections Under - 35 USC § 101**

Claims 122, 123 and 128-137 have been rejected under 35 U.S.C. 101 as being allegedly directed to non-statutory subject matter. The Examiner states that the data signal recited in claims 122, 123, and 128-137 is non-statutory descriptive material per se because it is not tangibly embodied in a computer-readable medium. The Applicants have amended claim 122 to recite a "computer data signal *tangibly embodied in a computer-readable medium* and propagated over a transmission medium for communication with a computer" as suggested by the Examiner. The Applicants submit that claim 122 complies with the statutory requirements provided under 35 U.S.C. 101 and respectfully requests reconsideration and

withdrawal of the outstanding rejection. It is believed that claims 123 and 128-137 are in compliance with the provisions of 35 U.S.C. 101 at least for reasons of their dependencies upon claim 122. The Applicants respectfully request reconsideration and withdrawal of the outstanding rejections of claims 122, 123, and 128-137.

**Claim Rejections Under - 35 USC § 102**

Claims 1, 2, 9, 10, 13-22, 44, 47-51, 58, 59, 62-71, 93, 96-100, 104-113, 116, 119-123, and 128-137 have been rejected under 35 U.S.C. 102(c) as being allegedly anticipated by U.S. Pat. No. 6,735,489 to Khurana.

The Examiner states with respect to claims 1, 50, 99, and 122, that Khurana teaches each and every element recited therein. The Applicants respectfully disagree. To anticipate a claim under 35 U.S.C. §102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), cert. denied, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements “arranged as in the claim.”(emphasis added) *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Moreover, “[t]he identical invention must be shown in as complete detail as is contained in the ...claim.”(emphasis added) *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

With regard to Claims 1, 50, 99, and 122 specifically, Applicants have amended these claims in a non-narrowing manner to further clarify that which the Applicant's consider as their invention. The amendment renders the rejection moot and Applicants respectfully contend that Khurana does not teach or disclose each element of the invention “arranged as in the claim”. Specifically, Khurana does not teach or suggest “*generating a virtual blank from a referenced set of geometries*, the virtual blank corresponding to the real-world blank and *lacking an associative relationship with a coordinate system*; creating a master process

model that includes the virtual blank, the master process model lacking an associative relationship with the coordinate system; *virtual machining at least one manufacturing feature into said virtual blank, each of said at least one manufacture feature exhibiting an associative relationship with said coordinate system*; and deriving manufacturing instructions from said master process model to create a real-world component by machining said manufacturing feature into the real-world blank.”

Khurana is devoid of teaching generating a virtual blank from a referenced set of geometries. Further, Khurana is devoid of teaching that the virtual blank lacks an associative relationship with a coordinate system. Moreover, Khurana neither teaches nor suggests virtual machining a manufacturing feature into the virtual blank whereby the manufacturing feature exhibits an associative relationship with the coordinate system.” Contrary to Applicants claims 1, 50, 99, and 122, Khurana specifically teaches that the virtual blank (termed therein as a base feature) exhibits a direct relationship with the coordinate system (Col. 3; Col. 4, lines 21-23). Accordingly, because Khurana does not teach or suggest each and every element recited in Applicants’ claims 1, 50, 99, and 122, these claims are not anticipated by Khurana. The Applicants respectfully request reconsideration and withdrawal of the outstanding rejections.

Claims 2, 9, 10, 13-22, 44, 47-49, 51, 58, 59, 62-71, 93, 96-98, 100, 104-113, 116, 119-121, 123, and 128-137 depend from respective claims 1, 50, 99, and 122. For at least these reasons, the Applicants submit that claims 2, 9, 10, 13-22, 44, 47-49, 51, 58, 59, 62-71, 93, 96-98, 100, 104-113, 116, 119-121, 123, and 128-137 are in condition for allowance and respectfully request reconsideration and withdrawal of the outstanding rejections.

**Claim Rejections Under - 35 USC § 103**

Claims 1, 2, 9, 10, 13-22, 44, 47-51, 58, 59, 62-71, 93, 96-100, 104-113, 116, 119-123, and 128-137 have been rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over U.S. Patent No. 6,629,065 issued to Gadhi in view of U.S. Patent No. 4,928,221 issued to Belkhirer.

Referring to claims 1, 50, 99, and 122, the Examiner states that Gadhi teaches each of the elements recited therein with the exception of deriving manufacturing instructions from

the master process model to create a real-world component by machining the manufacturing feature into the real-world blank. The Examiner introduces Belkhiter as teaching this element. The Applicants respectfully traverse. Gadh is devoid of teaching generating a virtual blank from a referenced set of geometries. Further, Gadh is devoid of teaching that the virtual blank lacks an associative relationship with a coordinate system. Moreover, Gadh neither teaches nor suggests virtual machining a manufacturing feature into the virtual blank whereby the manufacturing feature exhibits an associative relationship with the coordinate system. Gadh clearly teaches that the associative relationships are between the blocks, and not with a coordinate system, to establish the positioning and placement in various directions. For example, Gadh at Col. 24, lines 9 states: "FIG. 25A illustrates alignment of  $b_2$ , a child of  $b_1$ , in a +X axis (emphasis added) fixed on  $b_1$ ... Similarly, Fig. 25B illustrates alignment of  $b_3$  in the +X axis (emphasis added) with its parent  $b_2$ ." Furthermore, Gadh specifically teaches that the VSDP "uses a coordinate-system independent (emphasis added), ...method of alignment." Clearly this teaches directly away from Applicants claims. As Gadh does not teach these elements recited in claims 1, 50, 99, and 122, it follows that the combination of Gadh and Belkhiter (or Rebello) would not result in the Applicants claims 1, 50, 99, and 122.

Therefore, because neither Gadh, Belkhiter, nor Rebello, alone or in combination, disclose or make obvious each element of Applicants claims 1, 50, 99, and 122, they cannot render Applicant's claims unpatentable. Thus, the Applicants submit that claims 1, 50, 99, and 122 are in condition for allowance and respectfully request reconsideration and withdrawal of the outstanding rejections.

Claims 2, 9, 10, 13-22, 44, 47-49, 51, 58, 59, 62-71, 93, 96-98, 100, 104-113, 116, 119-121, 123, and 128-137 depend from respective claims 1, 50, 99, and 122. For at least these reasons, the Applicants submit that claims 2, 9, 10, 13-22, 44, 47-49, 51, 58, 59, 62-71, 93, 96-98, 100, 104-113, 116, 119-121, 123, and 128-137 are in condition for allowance and respectfully request reconsideration and withdrawal of the outstanding rejections.

#### Double Patenting

Claims 1, 2, 9, 10, 13-22, 44, 47-51, 58, 59, 62-71, 93, 96-100, 104-113, 116, 119-123, and 128-137 have been rejected under the judicially created doctrine of obviousness-type double patenting as being allegedly unpatentable over claims 1-78 of U.S. Patent No.

6,775,581 to Landers. Claims 1, 2, 9, 10, 13-22, 44, 47-51, 58, 59, 62-71, 93, 96-100, 104-113, 116, 119-123, and 128-137 have been rejected under the judicially created doctrine of obviousness-type double patenting as being allegedly unpatentable over claims 1-42 of U.S. Patent No. 6,754,556 issued to Landers. Claims 1, 2, 9, 10, 13-22, 44, 47-51, 58, 59, 62-71, 93, 96-100, 104-113, 116, 119-123, and 128-137 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-88 of copending Application No. 10/032959 to Landers.

The Applicants submit that the rejections of claims 1, 2, 9, 10, 13-22, 44, 47-51, 58, 59, 62, 71, 93, 96-100, 104-113, 116, 119-123, and 128-137 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-42 of U.S. Patent No. 6,754,556 issued to Landers is in error. The cited reference has an effective filing date of January 31, 2003 and is not qualified under the Doctrine to be properly regarded as Prior Art. Reconsideration and withdrawal of this rejection is respectfully requested.

In response to the remaining rejections under judicially created doctrine of obviousness-type double patenting, the Applicants submit concurrently herewith timely-filed Terminal Disclaimers in compliance with the provisions of 37 CFR 1.321(c). It is believed that these Terminal Disclaimers are sufficient to overcome the rejections presented by the Examiner. The Applicants respectfully request entry of these Terminal Disclaimers and withdrawal of the outstanding rejections.



Accordingly, as the cited references in the Office Action neither anticipate nor render obvious that which the applicant deems to be the invention, it is respectfully requested that claims 1, 2, 9, 10, 13 -- 22, 44, 47 -- 51, 58, 59, 62 -- 71, 93, 96 -- 100, 104 -- 113, 116, 119 -- 123, and 128 - 137 be passed to issue.

It is believed that the foregoing remarks fully comply with the Office Action.

If there are additional charges with respect to this matter or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully Submitted,

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